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EXAMINER	
ENSEY, BRIAN	

ART UNIT	PAPER NUMBER
2615	

DATE MAILED: 06/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/658,109	ROSENTHAL, JOYCE	
	Examiner	Art Unit	
	Brian Ensey	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *48 and 49* is/are allowed.

6)☒ Claim(s) *1-10,21,22,31-38, 42-45 and 47* is/are rejected.

7)☒ Claim(s) *11-20,23-30,39-41,45 and 46* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. Claims 1-9, 21, 22, 31, 32-36, 38, 42 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishige et al. U.S. Patent No. 5,852,668 in view of Hartl et al. U.S. Patent No. 4,739,512.

Regarding claim 1, Ishige discloses a hearing aid adapted to be worn in or about an ear (1), comprising: a microphone (2) to receive sound and to generate an input signal based on the sound; a signal processing circuit (4) housed by the housing and receiving the input signal from the microphone, the signal processing circuit to process the input signal and produce an output signal based on a plurality of signal processing parameters; a receiver (3) in the housing to transmit sound based on the output signal; a single parameter-select device to select a parameter of the plurality of signal processing parameters to be adjusted (A mode selection switch located on the manipulation board (8) to select one of a plurality of modes for compensating the hearing sense of the user. See col. 3, lines 25-31); and a parameter-adjust device to adjust the parameter selected by the parameter-select device (Another switch on the manipulation for changing the working conditions of the user's hearing sense in the mode selected by user operated mode selection switch See col. 3, lines 40-42). Ishige does not expressly disclose a hearing aid housing. However, the containment of hearing aid circuitry in a housing is well known in the art and Hartl teaches a common hearing aid housing (See fig. 1 and abstract). Therefore, it would

have been obvious to one of ordinary skill in the art at the time of the invention to utilize the housing of Hartl in the device of Ishige to contain and protect the hearing aid circuitry and provide a compact device for insertion into the ear of the user.

Regarding claims 2 and 3, the combination of Ishige in view of Hartl fails to teach the housing is adapted to be worn behind an ear or adapted to be positioned in a concha of an ear. However, it is well know in the art to place a hearing aid behind the ear (BTE), in the ear (ITE), in the canal (ITC) and completely in the canal (CIC) of the user and it would have been obvious to one of ordinary skill in the art at the time of the invention to provide multiple mounting configurations to meet the preferences of the users.

Regarding claim 4, the combination of Ishige in view of Hartl further discloses the housing is adapted to be positioned in the auditory canal of an ear (See Hartl Fig. 1 and col. 1, lines 54-56).

Regarding claims 5 and 6, the combination of Ishige in view of Hartl fails to teach the parameter-select device and parameter-adjust device comprises a potentiometer located about an external surface of the housing. However, the combination of Ishige in view of Hartl teaches two switches (7,8) located on the external surface of a hearing aid housing for parameter adjustments (See Fig. 3 Hartl and col. 4, lines 60 and 61). Further, it is well known in the art to use potentiometers for the parameter adjustment actuators. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the externally mounted adjustment actuators of Hartl to select and adjust the parameters of Ishige for easy access by the user.

Regarding claim 7, the combination of Ishige in view of Hartl does not expressly disclose the parameter-select device comprises a Resistance Technology Incorporated Trimmer Model 17 located about an external surface of the housing; and the parameter-adjust device comprises a Microtronic Volume Control Model DCU 93 located on an external surface of the housing. However, the combination of Ishige in view of Hartl does not limit the type of parameter select or adjust device used. Further, it is well known in the art to use potentiometers for the parameter adjustment actuators. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use any type of potentiometers or trimmers for control elements which are readily commercially available.

Regarding claim 8, the combination of Ishige in view of Hartl further discloses the signal processing circuit comprises a digital signal processing circuit (See Ishige col. 3, lines 1 and 2).

Regarding claim 9, the combination of Ishige in view of Hartl further discloses a program connection (data port) to receive instructions to be programmed into the signal processing circuit; a processor (4); a memory device (7) coupled to the processor; a first analog-to-digital converter (5) coupled between the microphone (2) and the processor (4) to convert the input signal from the microphone into a digital signal to be received by the processor; and a digital-to-analog converter (6) coupled between the processor and the receiver (3) to convert a digital signal from the processor to the output signal to be received by the receiver (See Ishige Fig. 1, col. 2, lines 42-50, col. 3, lines 43-62 and col. 5, lines 26-28). The combination of Ishige in view of Hartl fails to teach an interface coupled to the program connection, the processor, and the memory device to relay the instructions to the memory device and the processor. However, an

interface between the programming connection and processing devices to successfully transfer data from a fitting system to the hearing device.

Regarding claim 21, Ishige discloses a method of operating a hearing aid adapted to be worn in or about an ear, the method comprising: receiving sound in a microphone (2) in a hearing aid housing and generating an input signal based on the sound; processing the input signal into an output signal in a signal processing circuit (4) coupled to the microphone in the housing according to a plurality of parameters; generating sound from the output signal in a receiver (3) coupled to the signal processing circuit in the housing; selecting one of the parameters with control element (A mode selection switch located on the manipulation board (8) to select one of a plurality of modes for compensating the hearing sense of the user. See col. 3, lines 25-31); and adjusting the selected parameter with a control element device (Another switch on the manipulation for changing the working conditions of the user's hearing sense in the mode selected by user operated mode selection switch See col. 3, lines 40-42). Ishige does not expressly disclose a hearing aid housing. However, the containment of hearing aid circuitry in a housing is well known in the art and Hartl teaches a common hearing aid housing (See fig. 1 and abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the housing of Hartl in the device of Ishige to contain and protect the hearing aid circuitry and provide a compact device for insertion into the ear of the user. Further, Ishige fails to teach the parameter-select device and parameter-adjust device located about an external surface of the housing. However, Ishige teaches a manipulation board (8) for operation of parameter select and adjust (See Ishige fig. 1 and col. 3, lines 25-42) and Hartl teaches two switches (7,8) located on the external surface of a hearing aid housing for parameter adjustments

(See Fig. 3 Hartl and col. 4, lines 60 and 61). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the externally mounted adjustment actuators of Hartl to select and adjust the parameters of Ishige for easy access by the user.

Regarding claim 22, the combination of Ishige in view of Hartl does not expressly disclose rotating a parameter-select potentiometer on an external surface of the housing to one of a plurality of positions. However, the combination of Ishige in view of Hartl teaches two switches (7,8) located on the external surface of a hearing aid housing for parameter adjustments (See Fig. 3 Hartl and col. 4, lines 60 and 61). Further, it is well known in the art to use potentiometers for the parameter adjustment actuators. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the externally mounted adjustment actuators of Hartl to select and adjust the parameters of Ishige for easy access by the user.

Regarding claim 31, the combination of Ishige in view of Hartl further discloses converting the input signal into a digital input signal in an analog-to-digital converter (5); processing the digital input signal into a digital output signal in a digital signal processing circuit (4) according to the parameters; and converting the digital output signal into the output signal in a digital-to-analog converter (6) (See Ishige Fig. 1, col. 2, lines 42-50).

Regarding claim 32, the combination of Ishige in view of Hartl discloses a hearing aid adapted to be worn in or about an ear, comprising: a microphone (2) to receive sound and to generate an input signal based on the sound; a receiver (3) in the housing to transmit sound from the hearing aid based on an output signal; a first memory device (70) in the housing to store first parameters, the first parameters including full-on parameters (See col. 4, lines 51-54, initial

parameters from latest fitting are used); a second memory device (71) in the housing to store second parameters; a manual control device on the manipulation board (8) to select the first parameters to be changed; and a signal processing circuit (4) coupled between the microphone, the receiver, the first memory device, and the second memory device in the housing to process the input signal from the microphone and the output signal to be transmitted to the receiver according to the first parameters or the second parameters (See Ishige fig. 1 and col. 3, lines 25-62). Ishige does not expressly disclose a hearing aid housing or two separate memory devices. However, the containment of hearing aid circuitry in a housing is well known in the art and Hartl teaches a common hearing aid housing (See fig. 1 and abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the housing of Hartl in the device of Ishige to contain and protect the hearing aid circuitry and provide a compact device for insertion into the ear of the user. Further, Ishige teaches one memory device (7) having a plurality of sub-units (70, 71....7n) respectively storing hearing aid parameters. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a single memory device with multiple subunits for cost and space savings. Additionally, Ishige teaches a switch located on the manipulating board (8) to select the desired parameter (See Ishige fig. 1 and col. 3, lines 25-42) and Hartl teaches two switches (7,8) located on the external surface of a hearing aid housing for parameter adjustments (See Fig. 3 Hartl and col. 4, lines 60 and 61). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the externally mounted adjustment actuator of Hartl to select the parameters of Ishige for easy access by the user.

Regarding claims 33 and 34, the combination of Ishige in view of Hartl fails to teach the housing is adapted to be worn behind an ear or adapted to be positioned in a concha of an ear. However, it is well know in the art to place a hearing aid behind the ear (BTE), in the ear (ITE), in the canal (ITC) and completely in the canal (CIC) of the user and it would have been obvious to one of ordinary skill in the art at the time of the invention to provide multiple mounting configurations to meet the preferences of the users.

Regarding claim 35, the combination of Ishige in view of Hartl further discloses the housing is adapted to be positioned in the auditory canal of an ear (See Hartl Fig. 1 and col. 1, lines 54-56).

Regarding claim 36, the combination of Ishige in view of Hartl teaches one memory device (7) having a plurality of sub-units (70, 71....7n) respectively storing hearing aid parameters. The combination of Ishige in view of Hartl fails to teach
the first memory device comprises a first EEPROM and the second memory device comprises a second EEPROM. However, the use of EEPROM's as memory devices is well known in the art and it would have been obvious to one of ordinary skill in the art at the time of the invention that multiple EEPROMs be used for an easily reprogrammable memory configuration.

Regarding claim 38, the combination of Ishige in view of Hartl further discloses the signal processing circuit comprises a digital signal processing circuit (See Ishige col. 3, lines 1 and 2).

Regarding claim 42, the combination of Ishige in view of Hartl discloses a method of operating a hearing aid (1) adapted to be worn in or about the ear, the method comprising: receiving sound in a microphone (2) in a hearing aid housing and generating an input signal

based on the sound; selecting one of a first memory device (70) in the housing in which first parameters are stored and a second memory device (71) in the housing in which second parameters are stored with a memory select device on an external surface of the housing, the first parameters including full-on parameters (See col. 4, lines 51-54, initial parameters from latest fitting are used); processing the input signal into an output signal in a signal processing circuit (4) coupled to the microphone , the first memory device, and the second memory device in the housing according to the first parameters or the second parameters selected by the memory select device; and generating sound in a receiver (3) coupled to the signal processing circuit in the housing from the output signal (See Ishige Fig. 1 and col. 3, lines 25-62). Ishige does not expressly disclose a hearing aid housing or two separate memory devices. However, the containment of hearing aid circuitry in a housing is well known in the art and Hartl teaches a common hearing aid housing (See fig. 1 and abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the housing of Hartl in the device of Ishige to contain and protect the hearing aid circuitry and provide a compact device for insertion into the ear of the user. Further, Ishige teaches one memory device (7) having a plurality of sub-units (70, 71....7n) respectively storing hearing aid parameters. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a single memory device with multiple subunits for cost and space savings. Additionally, Ishige teaches a switch located on the manipulating board (8) to select the desired parameter (See Ishige fig. 1 and col. 3, lines 25-42) and Hartl teaches two switches (7,8) located on the external surface of a hearing aid housing for parameter adjustments (See Fig. 3 Hartl and col. 4, lines 60 and 61). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the

invention to use the externally mounted adjustment actuator of Hartl to select the parameters of Ishige for easy access by the user.

Regarding claim 47, the combination of Ishige in view of Hartl further discloses converting the input signal into a digital input signal in an analog-to-digital converter (5); processing the digital input signal into a digital output signal in a digital signal processing circuit (4) according to the parameters; and converting the digital output signal into the output signal in a digital-to-analog converter (6) (See Ishige Fig. 1, col. 2, lines 42-50).

2. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Ishige in view of Hartl as applied to claims 1 and 21 above, and further in view of Martin U.S. Patent No. 6,130,950.

Regarding claim 10, the combination of Ishige in view of Hartl discloses a hearing aid as claimed. The combination of Ishige in view of Hartl does not expressly disclose the signal processing circuit further comprises a second analog-to-digital converter coupled between the parameter-select device and the processor to convert an analog signal from the parameter-select device into a digital signal to be received by the processor to select one of the parameters. However, Martin teaches A/D converters between adjusting elements and the digital control (See Fig. 1). Further, since the combination of Ishige in view of Hartl teaches a DSP, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide A/D conversion of all analog input to the signal processor.

3. Claims 37, 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Ishige in view of Hartl as applied to claims 32 and 42 above, and further in view of Armstrong et al. U.S. Patent No. 6,937,738.

Regarding claims 37 and 43, the combination of Ishige in view of Hartl fails to teach selecting comprises pushing a pushbutton toggle switch located on an external surface of the housing to generate a pulse. However, Armstrong teaches pushing a pushbutton (16) toggle switch located on an external surface of the housing to generate a pulse to select between a series of configuration setups stored in the memory (See Fig. 1B and col. 2, lines 35-46). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a pushbutton switch to select the parameters of the combination of Ishige in view of Hartl for easier operation by the user.

Regarding claim 44, the combination of Ishige in view of Hartl fails to teach selecting one of a first EEPROM in the housing in which the first parameters are stored and a second EEPROM in the housing in which the second parameters are stored with the memory select device. However, the combination of Ishige in view of Hartl teaches one memory device (7) having a plurality of sub-units (70, 71....7n) respectively storing hearing aid parameters. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a single memory device with multiple subunits for cost and space savings.

Allowable Subject Matter

4. Claims 48 and 49 are allowed.

5. Claims 11-20, 23-30, 39-41, 45 and 46 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments filed 03/03/06 have been fully considered but they are not persuasive.

With respect to the applicant's argument that *a parameter-select device to select a parameter to be adjusted is different from a mode selection switch to select a mode associated with a set of parameter values for use to compensate hearing sense in a particular environment,* the Examiner disagrees.

The Examiner notes that Ishige (US 5852668) teaches a mode selection switch accessible by the user (and therefore inherently on the external housing of the hearing aid) to change the mode of operation of the hearing aid. This change of mode selects hearing aid data and control data from the memory unit (7). While this selection may result in the selection of a specific data set, the data set represents a specific hearing mode (i.e., "on a street", "at night". See col. 3, lines 30-35). Each mode represents a specific parameter change required to meet the desired listening situation and can be nothing more than a change in volume or gain or compression ratio. Ishige teaches the data set is representative of the suitable hearing aid characteristics or suitable hearing aid parameters but does not require a multiple number of parameters to be simultaneously changed. The parameter changed is dependent on the desired environmental situation. The resulting selection of a desired mode to alter a desired parameter or parameter set produces the

same result as the applicant's invention, that is providing the user with a method to select a desired parameter to adjust the hearing aid to suit the user's individual need and to save space by minimizing the number of controls on the hearing device itself. Therefore, it is the opinion of the examiner that the mode selection switch of Ishige meets the limitations of the parameter select switch as claimed by the applicant.

With respect to the applicant's argument that *a parameter-adjust device to adjust the parameter selected by the parameter-select device is different from a switch to interpolate between sets of parameters,* the Examiner disagrees.

Ishige clearly teaches a switch separate from the mode select switch accessible by the user (and therefore inherently on the external housing of the hearing aid) to adjust the parameter selected by the operation of the mode select switch. While the switch uses an interpolator to determine the value of the selected parameter, it clearly "adjusts" or changes the value of the selected parameter. Therefore, it is the opinion of the examiner that the switch for changing the working conditions (See Ishige col. 3, lines 39-41) of Ishige meets the limitations of the parameter adjust switch as claimed by the applicant.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group **Art Unit 2615**.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Ensey whose telephone number is 571-272-7496. The examiner can normally be reached on Monday - Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any response to this action should be mailed to:

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Or faxed to:

(571) 273-8300, for formal communications intended for entry and for informal or draft communications, please label "PROPOSED" or "DRAFT".

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SINH TRAN
SUPERVISORY PATENT EXAMINER

BKE
May 31, 2006